



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2014-0756; Directorate Identifier 2014-NM-103-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all The Boeing Company Model 707 airplanes, and Model 720 and 720B series airplanes. This proposed AD is intended to complete certain mandated programs intended to support the airplane reaching its limit of validity (LOV) of the engineering data that support the established structural maintenance program. This proposed AD would require repetitive inspections for cracking of the inboard and outboard midspar fittings of the nacelle struts and of the torque bulkhead, midspar chords, drag fitting, and front spar support, and doing applicable related investigative and corrective actions; replacing the midspar fittings; and doing other specified actions. We are proposing this AD to detect and correct cracking in the midspar fittings of the inboard and outboard nacelle struts, which could result in the loss of the structural integrity of the midspar fitting. This condition could cause an unsafe separation of the engine and consequent wing fire.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0756; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Chandra Ramdoss, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5239; fax: 562-627-5210; email: chandraduth.ramdoss@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2014-0756; Directorate Identifier 2014-NM-103-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

As described in FAA Advisory Circular 120-104 (http://www.faa.gov/documentLibrary/media/Advisory_Circular/120-104.pdf), several programs have been developed to support initiatives that will ensure the continued airworthiness of aging airplane structure. The last element of those initiatives is the requirement to establish a limit of validity (LOV) of the engineering data that support the structural maintenance program under 14 CFR 26.21. This proposed AD is the result of an assessment of the previously established programs by Boeing during the process of establishing the LOV for Model 707 airplanes and Model 720 and 720B series airplanes. The actions specified in this proposed AD are necessary to complete certain programs to ensure the continued airworthiness of aging airplane structure and to support an airplane reaching its LOV.

We received reports of cracked midspar fittings on the inboard and outboard nacelle struts. The airplanes had accumulated between 9,900 and 63,000 total flight hours. Five of these airplanes had cracked midspar fittings that resulted in separation of the inboard strut and engine from the airplane inflight. In two of those events the inboard nacelle strut contacted the outboard engine, causing it to separate from the airplane. Operators have also reported cracking in the transition radius of the inboard and outboard midspar fittings of the nacelle struts of the numbers 1 and 4 engines.

The reported cracks on the inboard and outboard midspar fittings of the nacelle struts of engines numbers 1, 2, 3, and 4 were found to be vertical at the lug hole or across the double horizontal tangs at the radius where the tangs merge with the lug. Analysis determined that the 4330 steel midspar fittings cracked as a result of stress corrosion and fatigue at the lug and fatigue at the tangs.

Cracked midspar fittings, if not detected and corrected, could result in the loss of the structural integrity of the midspar fitting. This condition could cause an unsafe separation of the engine and consequent wing fire.

Relevant Service Information

We reviewed Boeing 707 Alert Service Bulletin A3183, Revision 6, dated February 7, 2014. For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0756.

Related Rulemaking

AD 93-11-02, Amendment 39-8594, Docket No. 92-NM-230-AD, which applies to The Boeing Company Model 707 and 720 series airplanes, requires repetitive inspections for cracking of the midspar fittings on the inboard struts, related investigative and corrective actions if necessary, and replacement of the midspar fittings with new, improved fittings, which constitutes terminating action for the repetitive inspections.

AD 2012-16-12, Amendment 39-17159 (77 FR 49708, August 17, 2012), which applies to The Boeing Company Model 707 airplanes, and Model 720 and 720B series airplanes, requires a detailed inspection of the midspar fittings of the nacelle struts for engine numbers 2 and 3 to confirm that the correct part number is installed, and installing the correct part number if it is not installed. The correct part number is the new, improved midspar fitting required by AD 93-11-02, Amendment 39-8594, Docket No. 92-NM-230-AD. AD 2012-16-12 also requires repetitive high frequency eddy current inspections (HFEC) of the midspar fittings of engine numbers 2 and 3 nacelle struts for cracks and repair if necessary. In addition, AD 2012-16-12 requires repetitive general visual inspections of the nacelle struts of engine numbers 1, 2, 3, and 4 to verify that the nacelle strut has not drooped below its normal position, and repair if necessary.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishing the inspections for cracking of the inboard and outboard midspar fittings of the nacelle struts and of the torque bulkhead, midspar chords, drag fitting, and front spar support, and doing applicable related investigative and corrective actions; replacing the midspar fittings; and doing other

specified actions; as specified in parts 2 through 6, inclusive, of the Accomplishment Instructions of the service information described previously, except as discussed under “Differences Between this Proposed AD and the Service Information.”

The phrase “related investigative actions” is used in this proposed AD. “Related investigative actions” are follow-on actions that (1) are related to the primary actions, and (2) further investigate the nature of any condition found. Related investigative actions in an AD could include, for example, inspections.

The phrase “corrective actions” is used in this proposed AD. “Corrective actions” are actions that correct or address any condition found. Corrective actions in an AD could include, for example, repairs.

The phrase “other specified actions” is used in this proposed AD. Other specified actions in this proposed AD include installing new inboard and outboard midspar fittings, installing oversized fasteners in the two forward most fastener holes common to the inboard side of the nacelle strut overwing support fitting and the wing front spar upper chord, applying sealant to the midspar area, and applying corrosion inhibiting compound to the midspar fitting areas.

We have determined that the actions specified in table 1 of paragraph 1.E., “Compliance,” of Boeing 707 Alert Service Bulletin A3183, Revision 6, dated February 7, 2014, should not be required in this AD, as noted in the service bulletin.

Differences Between this Proposed AD and the Service Information

Boeing 707 Alert Service Bulletin A3183, Revision 6, dated February 7, 2014, specifies to contact the manufacturer for fitting installation instructions and instructions on how to repair certain conditions, but this proposed AD would require doing those corrective actions in one of the following ways:

- In accordance with a method that we approve; or

- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

Costs of Compliance

We estimate that this proposed AD affects 12 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspections	214 work-hours X \$85 per hour = \$18,190 per inspection cycle	\$0	\$18,190	\$218,280
Replacement of midspar fitting	18 work-hours X \$85 per hour = \$1,530	Up to \$7,867	Up to \$9,397	Up to \$112,764
Mid-interval inspections	107 work-hours X \$85 per hour = \$9,095 per inspection cycle	\$0	\$9,095	\$109,140

We estimate the following costs to do any additional inspections that would be required based on the results of the proposed inspections. We have no way of determining the number of aircraft that might need these inspections:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Inspections	Up to 21 work-hours X \$85 per hour = \$1,785	\$0	\$1,785

We have received no definitive data that would enable us to provide cost estimates for the on-condition corrective actions specified in this AD.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA-2014-0756; Directorate Identifier 2014-NM-103-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all The Boeing Company Model 707-100 long body, -200, -100B long body, and -100B short body series airplanes; Model 707-300, -300B, -300C, and -400 series airplanes; and Model 720 and 720B series airplanes; certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 54, Nacelles/Pylons.

(e) Unsafe Condition

This AD was prompted by certain mandated programs intended to support the airplane reaching its limit of validity (LOV) of the engineering data that support the established structural maintenance program. We are issuing this AD to detect and correct cracking in the midspar fittings of the inboard and outboard nacelle struts, which could result in the loss of the structural integrity of the midspar fitting. This condition could cause an unsafe separation of the engine and consequent engine fire.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Inspections of Nacelle Struts and Surrounding Structure and Replacement of Inboard and Outboard Midspar Fittings

At the applicable time specified in table 2 or table 3 of paragraph 1.E., “Compliance,” of Boeing 707 Alert Service Bulletin A3183, Revision 6, dated February 7, 2014, except as required by paragraph (i)(1) of this AD: Do the inspections required by paragraphs (g)(1), (g)(2), and (g)(3) of this AD in accordance with part 2 or part 3, as applicable, of the Accomplishment Instructions of Boeing Alert Service Bulletin A3183, Revision 6, dated February 7, 2014, except as required by paragraph (i)(2) of this AD. Before further flight, do all applicable related investigative and corrective actions, replace the inboard and outboard midspar fittings with new parts, and do other specified actions (including installing new bushings and oversize fasteners) in accordance with part 2 or part 3, as applicable, of the Accomplishment Instructions of Boeing Alert Service Bulletin A3183, Revision 6, dated February 7, 2014, except as required by paragraph (i)(2) of this AD. Repeat the inspections required by paragraphs (g)(1), (g)(2), and (g)(3) of this AD thereafter at the applicable intervals specified in table 2 or table 3 of paragraph 1.E., “Compliance,” of Boeing 707 Alert Service Bulletin A3183, Revision 6, dated February 7, 2014, except as required by paragraph (i)(1) of this AD.

(1) A detailed inspection and a high frequency eddy current inspection (HFEC) for cracks in the inboard and outboard midspar fittings of the nacelle struts.

(2) Open hole HFEC inspections for cracks in the torque bulkhead, midspar chords, drag fitting, and front spar support.

(3) A surface HFEC inspection of the front spar support for cracks.

(h) Mid-Interval Inspections and Replacement of Nacelle Strut Midspar Fittings

At the applicable time specified in table 4 or 5 of paragraph 1.E., “Compliance,” of Boeing 707 Alert Service Bulletin A3183, Revision 6, dated February 7, 2014: Do the inspections required by paragraphs (h)(1), (h)(2), and (h)(3) of this AD, in accordance with part 4 or part 5, as applicable, of the Accomplishment Instructions of Boeing Alert Service Bulletin A3183, Revision 6, dated February 7, 2014, except as required by paragraph (i)(2) of this AD. Do all applicable related investigative, corrective, and other specified actions (including installing new bushings and oversize fasteners) before further flight. Repeat the inspections required by paragraphs (h)(1), (h)(2), and (h)(3) of this AD thereafter at the applicable intervals specified in table 4 or 5 of paragraph 1.E., “Compliance,” of Boeing 707 Alert Service Bulletin A3183, Revision 6, dated February 7, 2014. The threshold for the repetitive inspections required by paragraphs (h)(1), (h)(2), and (h)(3) of this AD is 1,500 flight cycles or 48 months, whichever occurs first, since the most recent midspar fitting replacement.

(1) A detailed inspection and a surface HFEC inspection for cracks in the inboard and outboard midspar fittings of the nacelle struts.

(2) An open hole HFEC inspection for cracks in the drag fitting and front spar support.

(3) A surface HFEC inspection for cracks in the front spar support.

(i) Exceptions to Service Information Specifications

(1) Where Boeing 707 Alert Service Bulletin A3183, Revision 6, dated February 7, 2014, specifies a compliance time “after the Revision 6 date of this service bulletin,” this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing 707 Alert Service Bulletin A3183, Revision 6, dated February 7, 2014, specifies to contact Boeing for appropriate action: Do corrective actions before further flight using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(j) Special Flight Permit

Special flight permits, as described in Section 21.197 and Section 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199), are not allowed.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles Aircraft Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (l)(1) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane and the approval must specifically refer to this AD.

(I) Related Information

(1) For more information about this AD, contact Chandra Ramdoss, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5239; fax: 562-627-5210; email: chandraduth.ramdoss@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on November 5, 2014.

Jeffrey E. Duven,
Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

[FR Doc. 2014-26837 Filed 11/12/2014 at 8:45 am; Publication Date: 11/13/2014]